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Unraveling the Notion of "Fair Carbon": Key Challenges for Standards Development

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Summary. — Standards organizations and NGOs have begun to refer to "fair carbon" projects, and "fairly traded" carbon credits. "Fairness" is a fuzzy notion, subject to multiple and competing interpretations. This paper draws on a framing used by standards organizations, which encompasses issues of access and benefits, to critically examine challenges and opportunities for achieving desired "fair" outcomes as discussed in the literature. Arising knowledge gaps are presented as a research agenda that explores what "fair carbon" means to multiple stakeholders; illuminates governance processes through which "fairness" is being standardized; and examines its implications within certified carbon projects.

Key words — standard setting organizations, carbon projects, voluntary carbon market, access, benefits, sub Saharan Africa

1. INTRODUCTION

Carbon markets have become one of the main approaches to mitigating the climate crisis worldwide (Lohmann, 2010). They allow governments, companies, and individuals to compensate their own emissions by financing emissions reductions in another area of the world, in both an efficient and politically attractive way (Boyd, Boykoff, & Newell, 2011). Carbon offsets, which involve the measurement and transaction of emissions savings, have become a new commodity linking north and south via a complex array of technologies, institutions, and discourses (Bumpus & Liverman, 2008). They are created within carbon projects, which involve sets of activities which supposedly result in less greenhouse gases in the atmosphere compared to a hypothetical situation without the project (Lohmann, 2010). However, concerns about dubious environmental effectiveness (Green, 2013) and the equity, justice, governance, and legitimacy of the mechanisms that carbon markets entail (McDermott, Mahanty, & Schreckenberg, 2013; Merger & Pistorius, 2011; Page, 2012), render them highly controversial.

In the absence of an effective United Nations coordinated global agreement, the carbon arena looks set to become more fragmented and complex (Lövbrand & Stripple, 2012). Markets are being created at transnational, regional, national, and sub-national levels, by governments as well as private actors, and many of them are not linked to the Kyoto Protocol at all (Newell, Pizer, & Raimi, 2013). Perspectives on the way forward are equally fragmented. Movements opposing carbon markets and their attempts to commodify the Earth's carbon cycling capacity, and campaigns for a fair transition away from fossil fuel dependence, co-exist along technical-fix proposals for governments to expand carbon markets. This complex interplay of actors combines with calls for Standard Setting Organizations (SSOs) to oversee better measurement and calculation and develop new schemes for certification and reform (Lohmann, 2010). Insufficient attention has been paid to the performance of these schemes, or the normative ideals they invoke (Page, 2012). As the schemes and the markets they are part of are socially and politically embedded, they hold the potential to be socially and politically transformative. There is need to determine whether SSOs can trigger alternative outcomes where equity and justice can emerge (Fairhead, Leach, & Scoones, 2012, p. 254), or whether they are simply laying down ever more implausible sets of rules and procedures (Lohmann, 2010) that do little to interact with the global development agenda.

Our aim in this paper is to respond to this need by undertaking a critical analysis of one particular attempt to innovate and revise a portion of the voluntary carbon market and introduce the normative ideal of fairness. This is being conducted through an initiative involving a carbon SSO (Gold Standard) and a sustainability SSO (Fairtrade International). Their partnership has brought the concepts of Fair Trade and Carbon Trading to the same table for the first time, with a commitment to enhance fairness in the carbon market. Fairness, equity, and justice are widely interpreted and lack clear definitions within carbon projects (Luttrell *et al.*, 2013; McDermott *et al.*, 2013). This contested ground is also apparent within sustainability product certification, where Fairtrade International's hegemony of power to define fairness is internally and externally contested, with competing actors beginning to develop their own "fair" labels (Renard & Loconto, 2013; Tallontire & Nelson, 2013). We use the term fairness to encompass justice and equity concerns in the carbon market, following Schroeder and McDermott (2014), and the term "fair carbon" to refer to the normative ideal of incorporating fairness into the

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carbon market, which is what Gold Standard (GS) and Fairtrade International (FI) are aiming towards.[1] "Fair carbon" is likely to be met with mixed responses, as for some it represents a misnomer, while for others, it offers a space for change. We unravel the concept by exploring the context in which it is being introduced, the meanings attached to it, and the challenges implied by commitments to achieving it.

The structure of this paper is as follows. In Section 2 we define the context for our analysis by locating the GS–FI partnership alongside parallel standard setting initiatives within the voluntary market, and explaining the triggers for this particular partnership. In Section 3 we unravel or operationalize the concept of "fair carbon" by examining its meanings in three interrelated areas. This involves: (a) reviewing ethical debates around the concept of carbon trading; (b) looking at the SSOs' own initial interpretations of fairness, which center on questions of access and benefits; and (c) exploring theoretical understandings of the relationships between access, benefits, and fairness in the context of carbon markets and carbon projects. Section 4 displays the methodology for conducting the literature review presented in Section 5. We identify structural and practical challenges in the current carbon market space which Gold Standard (GS) and Fairtrade International (FI) would need to address if they were to fulfill their fairness commitments, and map these alongside their proposed interventions.[2] We also highlight key lessons from ongoing attempts by carbon project developers and SSOs to open up access and enhance benefits. In Section 6, we identify next steps to be addressed through a critical longitudinal analysis of the GS–FI partnership. These include embedding it more deeply within contemporary sustainability governance dynamics, identifying what exactly fairness means to the various actors involved and which mechanisms are deemed appropriate for achieving it, and critically assessing these mechanisms in the context of particular smallholder- and community-focused carbon projects. Our focus is largely on sub-Saharan Africa and bio-carbon projects (carbon stored above or below ground, in trees, forests, and soils) targeting smallholders and communities. These foci do not prevent more generic application of the findings.

2. STANDARD SETTING ON THE VOLUNTARY CARBON MARKET

The voluntary carbon market (voluntary market) is the forum for trade of *verified emissions reductions* and operates in parallel with the compliance market developed under the framework of the UN-created Clean Development Mechanism (CDM)). The voluntary market was established by NGOs and private sector companies in the late 1990s at the same time as the CDM (Bumpus & Liverman, 2011). Verified emissions reductions are sold to governments, companies, and individuals who voluntarily offset their emissions, claim carbon neutrality, and/or invest in projects in the developing world (Bumpus & Liverman, 2011; Peters-Stanley & Gonzalez, 2014) without contributing to national reduction targets. The voluntary market has thus far constituted only a fraction of the total carbon market, and like the CDM, has been affected by the global financial down-turn and suppressed market demand (Boyd *et al.*, 2011). However, whereas the CDM was on the verge of collapse by late 2012 (Moosa *et al.*, 2012), the voluntary market has remained more resilient (Peters-Stanley *et al.*, 2012). We focus on this fast-developing private area of the carbon regime, following an expanding series of studies (Bulkeley *et al.*, 2012; Green, 2013; Hale & Roger, 2014), attending to the potential spaces for change and incremental innovations and revisions which are being carved out by private rule-setters and carbon project implementers.[3]

Since the early 21st century, a growing number of SSOs have stepped into the voluntary market to address concerns about lack of transparent governance, rigor, and credibility and forge new approaches which might address the shortcomings of the CDM (Lovell, 2010). Through the certification they issue, SSOs can potentially make ethical qualities visible to the consumer and influence demand (Taylor, 2005), provide reputational benefits, and insulate projects from activist-led naming and shaming campaigns (Green, 2013). SSOs have been established by different types of actors for different purposes. For example, the Verified Carbon Standard (VCS) was launched in 2006 by private sector actors, with the aim to reduce the costs and administrative burdens of the CDM and open up eligibility to new types of emissions-reducing activities (Kollmuss, Zink, & Polycarp, 2008). GS launched the same year, and was founded by World Wildlife Fund based on the conviction than the quality of offsets needed to be raised in terms of their social and environmental benefits, which the CDM promised but did not have a strong track record in delivering. During 2006–12, GS offered certification only for projects related to energy efficiency and renewable energy. It based its standards on CDM methodologies, and incorporated additional criteria for sustainable development and stakeholder consultation. VCS and GS are the principal carbon accounting standards on the VCM (proposing tools and methodologies for accounting of the carbon or equivalent emission reductions for different project-based activities). Whereas VCS has consistently certified the majority of VERs since its creation, GS offsets have typically sold at premium prices because they incorporate multiple attributes (such as ensuring significant and lasting contributions to sustainable development, and providing assurance that investments support environmental integrity). The GS–FI partnership announced in December 2012 (Gold Standard Foundation and Fairtrade International, 2012) marked FI's entry to the carbon world as a strategy for supporting small-scale farmers to benefit from climate finance. It coincided with GS's decision to develop new methodologies and standards for reducing emissions from land use and forestry.[4] The GS–FI partnership is one of many cases of SSOs combining forces to enhance the range of their expertise. Together, they aim to provide robust, versatile, and accessible certification systems, using tools such as dual certification, optional add-on modules, and streamlined documentation.[5] In a market context, SSOs are compelled to set themselves apart from other competitors and demonstrate product (offset) quality (Green, 2013, p. 6). The GS–FI partnership can be understood as a measure to help meet the demands of customers and suppliers of carbon offsets and maintain market share (Green, 2013). The prospect of a GS–FI label that can enhance marketability and legitimacy of offsets may appeal to project developers, brokers, retailers, and customers.

Other standards have been developed with the aim of encouraging, measuring, and communicating environmental and social benefits. Plan Vivo was initiated in 1994 as a framework for "supporting communities to manage their natural resources more sustainably, with a view to generating climate, livelihood and ecosystem benefits" (Plan Vivo, 2014). Plan Vivo certification has been limited to a few small-scale land based projects, but each requires strong local community involvement. The Climate, Community, and Biodiversity (CCB) Standard and the Social Carbon standard are both 'project design' or 'co-benefits' standards, used to certify the design and implementation of a carbon project in combination

with a carbon accounting standard (usually VCS) to generate carbon credits. Combined VCS–CCB certification has become popular since the two organizations launched their joint certification scheme (Peters-Stanley & Gonzalez, 2014).

The growing field of standards and associated methodologies has emerged together with the expansion of carbon projects into new locations and activity sectors in the global South. Northern offsets companies and NGOs are pioneering the projects, and often claim that they are assisting local communities, providing co-benefits, and actively engaging people in the creation of the reductions (Bumpus & Liverman, 2011). Some project developers have asserted that their conduct and project implementation mechanisms are "fair", and that their offsets are "fairly traded". [6] Given the controversy that surrounds carbon trading, such claims are likely to be contested in the absence of sufficient contextual information. GS and FI are attempting to mediate such claims through their partnership. Below we introduce the ethical debates that GS and FI need to engage with to ensure the societal legitimacy of their approach.

3. UNRAVELING FAIR CARBON

(a) *Can carbon be fair?*

Carbon trading has divided NGO, academic and policy-making communities. Some acknowledge the key role it must play in combating climate change; others out-rightly oppose it (Bachram, 2004; Caney, 2010). Within academic, policy, and campaigns literature, critics have referred to carbon trade as dumping (Bachram, 2004; Lohmann, 2005) of carbon in poor countries, while rich countries "continue in their unequal overconsumption of the world's resources" (Bachram, 2004, p. 16). Carbon colonialism has been coined to refer to actors in rich countries who entice people in poorer countries into sacrificing long-term development goals in pursuit of short-term capital gains associated with creating carbon offsets (Bachram, 2004; Page, 2012). As a result, poorer countries may exhaust their cheaper mitigation options and need to engage in costlier strategies to meet their reduction targets should these become compulsory. Other critics argue that everyone should minimize their own environmental impact (Sandel, 2005), with the ultimate goal being to catalyze a transition away from fossil fuels (Lohmann, 2010).

The main argument for paying others to reduce emissions through carbon trading is that it can improve environmental quality (or minimize environmental harm) at least the economic cost and with minimum worsening of existing global inequities (Page, 2012). When carbon trading was first introduced, developing nations were motivated by the prospect of financial and technological transfers from the global North to the global South (Boyd *et al.*, 2011), which were intended to be channeled into low carbon development pathways. If an intervention does effectively reduce emissions to a safe level, it could be judged as just on one level because everyone is entitled, as a matter of justice, to be protected from anthropogenic climate change (Caney, 2010). However, arguments of efficiency and environmental effectiveness do not adequately address the ethical dimensions of carbon trading. It is important to assess whether those involved in carbon trading schemes consider the distribution of costs and burdens to be fair (Caney, 2010), and whether they perceive the scheme to be politically legitimate and procedurally just (Page, 2012). Any ethical appraisal of carbon trading "must be sensitive to the very diverse forms it can take" (Caney, 2010, p. 198). Such an appraisal can only be done on a case-by-case basis, exploring how particular schemes operate, whether they are considered legitimate, which outcomes they result in and whether the people involved perceive them to be fair. It is too early to determine whether the GS–FI partnership and the GS–FI certified projects will result in outcomes considered fair, but our analysis here is a first step in a more extensive appraisal of the standard-setting process, its legitimacy, and its potential outcomes on the ground.

(b) *Pillars of fairness for the standard-setters: access and benefits*

"Fair carbon" has not yet been clearly defined in the GS–FI-standard setting process. This section nevertheless explores the aspects of fairness these organizations initially announced that they would tackle. [7] Firstly, FI and GS claim their collaboration will enable access to the carbon market for "thousands more smallholders in developing countries" (Gold Standard Foundation and Fairtrade International, 2012). "Communities" and "farming communities" are also referred to as intended target beneficiaries from their collaboration (Gold Standard Foundation, 2014). Several mechanisms are mentioned to address access issues: streamlined and simplified processes and reduced transaction costs (Gold Standard Foundation and Fairtrade International, 2012); guidelines for application of methodologies, making them easier and more relevant to smallholders and community projects; tools and capacity-building sessions for smallholders, making it easier for them to participate in carbon markets; and upfront finance mechanisms. Secondly, through their collaboration, GS and FI seek to ensure benefits to smallholders from the carbon market. This is framed in terms of finance for those who are least responsible for atmospheric greenhouse gas emissions, enabling them to both adapt to and mitigate climate change in a way that is "fair to both people and planet" (Gold Standard Foundation and Fairtrade International, 2012, p. 1). One way in which GS suggest benefits could be increased through a future Fairtrade label for GS credits is through "defined, direct and financial benefits to communities" (Gold Standard Foundation, 2014).

(c) *Behind the pillars of access and benefits: what does the literature say?*

Fairness in access roughly maps onto Brown and Corbera's (2003) equity of access; while fairness in benefits links to several concepts including distributional justice (Mathur, Afionis, Paavola, Dougill, & Stringer, 2014; McDermott *et al.*, 2013), benefit-sharing (within REDD+), the fair distribution of benefits (Luttrell *et al.*, 2013), or equity of outcome (Brown & Corbera, 2003). Below we deal with access and benefits separately and add a third closely related concept of procedural fairness, also referred to as equity and legitimacy in decision-making and institutions (Brown & Corbera, 2003).

According to Brown and Corbera (2003), equity of access to carbon markets refers to the ways that different actors are able to engage with and participate in the carbon market via carbon projects. Equity of access depends on factors including information, communication, knowledge, and formal and informal institutions that shape access to resources, and also determines the ways that different stakeholders can participate in and benefit from projects. Equity of access has also been associated with McDermott *et al.*'s (2013) concept of contextual equity (Luttrell *et al.*, 2013) because it involves acknowledging contextual factors such as capacity, power, cultural values, social capital, and the level of dependence on resources

(Konow, 2001) used in the project. We refer to this component as "fair access" in our analysis. Fair distribution and related concepts refer to the ways that stakeholders can benefit from project outcomes, based on a distribution of net benefits (Luttrell *et al.*, 2013). Benefits are often considered monetary and quantifiable, but non-monetary benefits can also be important motivators (Fisher, 2012) and preconditions for taking part (Luttrell *et al.*, 2013). Fair distribution is likely to be contested and contextual as the involvement of multiple stakeholders means that there will be multiple rationales for deciding how benefits are shared (Luttrell *et al.*, 2013) and multiple notions of what a fair distribution would look like (McDermott *et al.*, 2013). We refer to this component as "fair benefit-sharing" in our analysis.

Both of these concepts are commonly used alongside procedural fairness, which refers to the ways that stakeholders participate in decision making and/or project implementation, and the rules and procedures themselves (Brown & Corbera, 2003; Suiseeya & Caplow, 2013). Procedural fairness is seen as a pathway to fair benefit-sharing because for outcomes to be considered as fair, stakeholders must have taken part in decision-making and their values considered (Suiseeya & Caplow, 2013). It also links to fair access because it covers aspects of recognition, representation, power relations, and opportunities for participation (Mathur *et al.*, 2014). Achieving fair procedures is dependent on the implementation of rules and processes, the presence of representative and inclusive institutions, and the possibility to include, or negotiate between, competing views in a context where different stakeholders have different levels of knowledge, power, information, and languages at their disposal (Brown & Corbera, 2003). While some scholars see fair access as a component of procedural fairness (Mathur *et al.*, 2014; Schlosberg, 2004), we recognize that it interacts with both procedural fairness and fair benefit-sharing and consider it as separate but interlinked. Given the centrality of fair access and fair benefit-sharing in the GS–FI dialog, we focus on these two concepts. We nevertheless recognize the importance of fair procedures within the contexts projects are implemented, and within the rules and procedures of the standards to which they conform.

4. REVIEW METHODOLOGY

Our overall goal for the literature review was to understand the practical constraints, structural and contextual factors associated with fair access, and benefit-sharing for smallholders and communities, focusing on bio-carbon projects, in particular in sub-Saharan Africa (SSA). We focused on bio-carbon projects because their mitigation effectiveness is questionable (Newell *et al.*, 2013), benefits to participants are less evident (Bumpus & Liverman, 2008) compared to energy efficiency projects, for example involving distribution of improved cook-stoves (Simon, Bumpus, & Mann, 2012), and relatively few projects have been developed,[8] so understanding of their implications is largely unknown. We selected SSA because the region has fewer carbon projects being implemented,[9] suggesting that the biggest constraints are present there. We proceeded to identify relevant literature (project-specific case studies, multi-project reviews, general discussions about carbon projects in the target category, literature on specific carbon standards, and their application) by using search engines, reference lists of key articles, and articles citing them (see Table 1 for search terms used). We prioritized peer-reviewed literature but found limited studies of smallholder/community-focused bio-carbon projects being implemented, partly because there are still few projects to date and most are at early stages of implementation (see Table 2 for details on the eleven different carbon projects detailed in the case studies we identified-notably all but one are forest-carbon projects, but some also include agricultural land management within their activities). Many project studies conducted have been commissioned by project developers or donors and thus constitute gray literature, which we used only for background information rather than evidence. However, some of the peer-reviewed literature used gray literature as an evidence base (especially project documentation). We compensated for the paucity of project-specific literature by reviewing more general discussions on the challenges in implementing bio-carbon projects with smallholders and communities in SSA. We analyzed identified literature to locate key limitations to access and benefits, on the basis of the themes underlined in Table 1. We also analyzed the literature on specific carbon standards and their application using the Standards themes outlined in Table 1 as a basis. We found that Plan Vivo certified projects had been most extensively documented whereas the literature on other standards and project outcomes was limited to desk reviews (Suiseeya & Caplow, 2013; Wood, 2011).

5. LIMITS TO FAIR ACCESS AND BENEFIT-SHARING

(a) *Fair access*

In this section we use evidence from our literature search to gain a better understanding of some of the principal factors limiting the ability of smallholders and communities in Africa to engage with and participate in the carbon market via carbon projects. This concerns two overarching areas related to access to the land and legal resources for taking part in a carbon project; and the project development and implementation process.

(i) *Access to resources: land tenure and carbon rights*

Weak or insecure land tenure and property rights have been outlined as major barriers affecting the ability of smallholders, communities, and particular segments of communities, to adopt carbon-friendly land management practices (Perez, Roncoli, Neely, & Steiner, 2007) and participate in carbon projects (Dougill *et al.*, 2012; Jindal, Swallow, & Kerr, 2008). Indeed, secure property rights (either private or state-owned) are a major factor affecting the approval of afforestation/ reforestation projects under the CDM (Thomas, Dargusch, Harrison, & Herbohn, 2010). This is important because CDM rules have often been mirrored by standards used by projects on the voluntary market (Green, 2013). Tenure security matters when registering and implementing forest carbon projects because of the need to guarantee the long-term presence of the trees as carbon sinks. Standards and methodologies commonly use 25- or 30-year carbon accounting periods for afforestation/reforestation projects, and must be able to ensure the permanence of the carbon stock for at least this period. Project owners are required to demarcate the project area, and demonstrate ownership or control, or at least possess rights to the carbon stock within it (Leach & Scoones, 2013). Legal land titles are the principal means for demonstrating ownership or control. Contracts are used to document the transfer of ownership of the land, the trees on the land, and/or the rights to the carbon sequestered. However, these do not necessarily correspond with the realities of land tenure. In Africa the disconnect between statutory and customary land rights, plurality and co-existence of

Table 1. *Search terms and criteria*

Details of search terms and themes used to identify and analyze the literature
Key words used for initial literature search: "Carbon projects", crossed with themes such as equity; fairness; value chains; institutions; trade-offs; knowledge, expertise, and roles for local communities; and costs and benefits *Access themes explored:* • Challenges and opportunities for implementing bio-carbon projects with smallholders and communities in SSA • Pros, cons, and risks associated with including smallholders and communities within carbon markets • Types of bio-carbon project designs amenable to registration • Requirements for registering and implementing a project involving smallholders and communities • Resources required for taking part in bio-carbon projects • Role of institutions in shaping access to these resources *Benefits themes explored:* • Costs and benefits associated with the carbon project • Monetary and non-monetary benefits and their links with participation • How costs and benefits are distributed between project stakeholders • Opportunities for smallholders and community members to take part in project design or implementation *Standard themes explored:* • Rules, procedures, and mechanisms codified by standards • Impact of codification on project implementation and outcomes

Table 2. *Details of carbon project reviews and case studies identified in the literature*

Type of literature	No. of key articles	Project details (and number of studies covering the project)
Single-project case studies	6	Kenyan Agricultural Carbon Project (soil carbon), VCS certified (2)
		Uganda Trees for Global Benefits (community-based forestry), Plan Vivo certified (1)
		Mozambique Sofala Community Carbon Project (a.k.a. N'hambita), (community-based forestry), Plan Vivo certified (2)
		Mali: Carbon From Communities (community-based natural resource management), not certified (1)
Multi-project comparative case studies	5	Kenyan Agricultural Carbon Project (1)
		Mozambique Sofala Community Carbon Project (3)
		Uganda Trees for Global Benefits (2)
		Uganda Nile Basin Reforestation Project, CDM certified (1)
		Uganda Kikonda Forest Reserve, certified by Carbon Fix (now owned by Gold Standard) (protected area) (1)
		Malawi Trees for Hope (community-based forestry), Plan Vivo certified (1)
		Ghana Vision 2050 (forest plantation), considering CDM certification (1)
		Sierra Leone Western Area Peninsula Forest Reserve (protected area), applying for VCS certification (1)
		DRC Kamoa (environmental conservation), going for Plan Vivo certification (1)
		Tanzania Angai Villages Land Forest Reserve (REDD), no details of certification (1)
Africa-wide reviews of bio-carbon projects	2	1 study covered 42 projects, the other covered 23 projects (including some overlaps)

overlapping land tenure systems, the fluidity and dynamism which often characterizes customary tenure, and links between tree tenure and land claim, call into question the overall feasibility of conducting forest carbon projects (Unruh, 2008). Projects are liable to intensify competing claims and ignite land-related conflicts because they may entail changes in social relations with regard to land (Roncoli *et al.*, 2007; Unruh, 2008).

Carbon rights are also not neatly or easily translatable in contexts where projects are implemented. The term may refer to the title of the carbon credits generated in a project, or to

the rights to benefit from their sales (Karsenty, Vogel, & Castell, 2014). Few countries have developed legal definitions (for example Australia and Argentina). Where there is no overarching legislation, carbon rights are difficult to comprehend, or distinguish from other resource rights (Karsenty *et al.*, 2014; Lyster, 2011; Tienhaara, 2012) such as rights to forest or land or particular parts of trees, and are mostly left to the language of contracts where they are open to interpretation (Passero, 2008). The ambiguity of the notion, and lack of legislative framework, may mean that project participants are unaware of their rights. Even where awareness exists, they may still lack the information to understand the terms they are signing up to, negotiate more favorable terms or to claim and fully utilize their rights (Lohmann, 2006; Lyster, 2011). This issue also concerns future generations who may inherit tenure or use rights without the awareness or disposition to commit to what has already been signed. This is particularly problematic with long-term forest carbon projects that assign carbon rights over periods extending beyond the lifetime of project participants and infringing on the liberties of future generations.

Requirements set by SSOs such as demarcation, assigning of rights, demonstration of ownership, and establishment of contracts are all likely to be much less cost-effective and straightforward to achieve in smallholder and community-focused projects compared to projects carried out in large contiguous forest areas with simple and clear tenure and an overarching control of the carbon stock (Leach & Scoones, 2013; Unruh, 2008). This explains why project implementers may opt for plantation or fortress conservation models in forest carbon projects (Leach & Scoones, 2013). However several commercial carbon forestry projects in Africa have crumbled following pillaging by locals, loss of funding, or both (Reynolds, 2012), suggesting that they are not necessarily better able to guarantee carbon storage for the required number of years. Also, they are liable to lead to dispossession of land or user rights (Fairhead *et al.*, 2012), especially when the forest is created by consolidating customary land holdings (Unruh, 2008). Special measures are needed in order to facilitate the registration and certification of smallholder and community-focused carbon projects, but the literature suggests there is no one-size-fits-all approach. Table 3 outlines two approaches for tackling the issues of land tenure and carbon rights respectively. We analyze how each approach has been justified; give examples of where it has been applied, and raise important issues and concerns which may limit the applicability of these approaches in projects involving smallholders and communities.

Proposed interventions and lessons. GS and FI initially proposed the development of relevant methodologies for smallholders and communities, and guidelines for applying them, as part of an assortment of interventions (see Section 3(b)). This might provide an opportunity to address the limitations to access on the basis of land tenure and carbon rights outlined above. Notably, GS has limited experience with certification of land-based projects where land security is central (the majority of GS certified projects involve cook-stoves or other small domestic appliances and do not require land tenure security). Therefore, the following lessons are important to bear in mind where relevant methodologies and guidelines are being developed.

Firstly, projects and the standards they apply often ignore or simplify the complexities, proceeding as if ambiguity did not exist (Gupta, Lövbrand, Turnhout, & Vijge, 2012; Leach & Scoones, 2013). Attempts to formalize land tenure and clarify legal definitions of carbon rights, either as a prerequisite for, or an outcome of carbon standards and projects, may have negative impacts at the local level, even when they

Table 3. *Approaches for tackling tenure and carbon rights issues*

Approach	Rationale	Examples	Concerns or issues
Formalizing or strengthening of tenure	Deemed necessary for contracts to work and carbon services to be delivered (Jindal *et l.*, 2008)	Actively encouraged in VCS's methodology for mosaic and landscape scale REDD projects (VCS, 2014)	Formalization of land tenure often has not worked (Jindal *et al.*, 2008) and has sometimes resulted in violence (Unruh, 2008)
	Classified as an indirect benefit of project implementation (Luttrell *et al.*, 2013)	Plan Vivo projects in Uganda and Malawi resulted in formalization of tenure on community land and helped to channel benefits (Dougill *et al.*, 2012)	Interventions may intensify completing claims (Roncoli *et al.*, 2007)
Clear definitions for carbon rights	Most countries have not legally defined carbon rights so projects operate in a "vacuum of uncertainty" (Luttrell *et al.*, 2013)	Argentina: carbon rights legally equated with rights to land, meaning that only land owners can claim carbon rights (Karsenty *et al.*, 2014)	Equating carbon rights to land could jeopardize people's attempts to obtain land, because governments might choose to assign land to rent-seeking industries instead or refuse to transfer property rights to individuals and communities (Karsenty *et al.*, 2014)
	Could allow for communities or individuals to benefit from rights to carbon even if they do not own the land or trees they have planted on it (Luttrell *et al.*, 2013)		Defining and allocating carbon rights may also result in overriding customary rights to land (Lyster, 2011)
			May need to separate out rights to carbon from rights to trees or land (Unruh, 2008)

intended to facilitate access to projects and the application of standards. Changes to existing tenure arrangements may not necessarily be needed (Jindal *et al.*, 2008): it is land security rather than tenure that matters and this can be achieved through a variety of means (Perez *et al.*, 2007). It is therefore crucial to understand diverse tenure realities when standards are devised and specific realities in project contexts before they are designed.

Secondly, SSOs can mediate access to carbon projects for smallholders and communities through the methodologies they develop. For example, VCS developed a methodology for mosaic and landscape-scale REDD projects involving scattered, individual plots managed by various different farmers (VCS, 2014). While such attempts allow greater flexibility, they may still conflict with the livelihood patterns and goals of mobile people with multiple livelihoods (Leach & Scoones, 2013). People with grassroots experience including those who can advocate for local level perspectives, should be involved in the design of rules, procedures, and methodologies (Leach & Scoones, 2013). Focus must be placed on the generation of flexible and creative approaches for ensuring mitigation effectiveness which enhance rather than prevent access for smallholders and communities, and allow mitigation to be carried out in combination with, rather than at the expense of, local livelihood activities.

(ii) *Access to markets: technical complexities, uncertainties, and costs*

Assuming that land tenure and security have been dealt with appropriately by both SSOs and carbon project implementers, projects involving smallholders and communities still face significant barriers to implementation and market access. Challenges relate to technical complexity, uncertainties, and costs associated with project development, carbon accounting (monitoring, reporting, and verification of the carbon sequestration or emissions reductions created by project activities) and sales of offsets. Below we explore how these limit access to markets for smallholders and communities.

Project development and management. Project development requires multiple steps, starting with an initial assessment of the project idea, and outlining the carbon mitigation potential, social and environmental impacts, and the financial feasibility (Leach & Scoones, 2013). This must usually be approved by the SSO before moving onto a more detailed Project Design Document (PDD).The PDD outlines which carbon accounting methodologies are appropriate. It is often a long, technically-dense document, has implications on the volume of emissions reductions that a project will potentially generate, and sets out the data requirements for verifying project implementation and actual emissions reductions (Leach & Scoones, 2013). It forms the backbone for validation (according to the rules and criteria of the chosen standard), and periodic verification after the project is running, but only has to be written once per project. Actors involved in multiple projects become adept at producing PDDs in quite a formulaic way. Sometimes PDDs are insufficiently sensitive to local context or adaptive to changing local conditions, needs, and priorities. Projects are usually managed by external (often foreign) project developers who have skills in identifying potential project activities, defining and assuring the principles of operation, and searching for buyers (Corbera & Brown, 2010), or who pay consultants to assist them. It would be difficult for smallholders and communities to manage and implement projects by themselves. They therefore rely on project developers and other actors in the carbon offset value chain, and generally have a weak positioning in relation to these parties (Mathur *et al.*, 2014).

Carbon accounting. Carbon accounting is characterized by considerable ambiguity surrounding hypothetical calculations about emissions trajectories with or without the project (Lohmann, 2010), and assessments of the actual mitigation capacity of carbon projects (Jindal, Kerr, & Carter, 2012; Simon *et al.*, 2012). Various techniques are deployed for estimating and quantifying actual emissions reductions in forest and soil carbon projects. Calculations and measurements often involve computer-modeling, satellite imagery, and positioning systems (Corbera & Brown, 2010) which require upfront investment and technical capacity building (Perez *et al.*, 2007), or reliance on external parties. Information gained using technical methods needs to be contextualized and ground-truthed with field data from permanent fixed plots, tree surveys (Leach & Scoones, 2013), random sampling, and/or self-assessments by project participants (Atela, 2012). Generally, the more robust and complex the methodology for carbon accounting, the more expensive it is to implement, with direct implications for the amount of carbon revenue available to those involved in generating the offset. Field techniques may involve lower upfront investment costs but are more labor-intensive and time-consuming. However, with less rigorous methodologies, projects may be required to earmark a larger proportion of the emissions reductions in a risk-buffer to allow for accounting inaccuracies. In the Kenyan Agricultural Carbon Project, 60% of the carbon offsets generated were initially set aside (Atela, 2012), leaving little to cover project implementation and incentives for participants. Certain types and designs of project face larger challenges in monitoring of activities and carbon performance.

Soil carbon projects are notoriously costly and complex to monitor (Sharma & Suppan, 2011), although as more data become available, results can be extrapolated and costs decrease. Studies exploring cost-effectiveness of soil carbon projects often ignore the lower revenue gains resulting from high discount rates due to economic uncertainty (De Pinto, Magalhaes, & Ringler, 2010). Also, projects may need to aggregate large numbers of smallholders and communities within single schemes in order to generate sufficient emissions reduction volumes to render a project financially viable (Perez *et al.*, 2007; Scherr, Shames, & Friedman, 2012). When participants are geographically scattered, monitoring and verification become inherently more costly and complex (Leach, Fairhead, & Fraser, 2012; Perez *et al.*, 2007). While some authors advocate a role for communities in field data collection, to reduce costs and empower local people, this must be balanced against the need for robust accounting (Danielsen *et al.*, 2011; Gupta *et al.*, 2012; Palmer Fry, 2011) and the money available to remunerate people adequately. Some projects, such as Trees for Global Benefits in Uganda, rely on volunteers to undertake monitoring (Peskett, Schreckenberg, & Brown, 2011); this may keep costs down, but relies on people's willingness to work without financial rewards. Decisions about which methodologies and techniques should be used to generate which kinds of data, and who to involve in the collection and analysis, are politically-laden (Gupta *et al.*, 2012). They have direct implications for the empowerment or disenfranchisement of local communities, as well as directly affecting the benefits received within the community.

Verification, certification, and sales of offsets. The structure of the carbon market necessitates rigorous auditing (verification) of a project's performance and monitoring data, because the intangibility of carbon offsets means it is possible to intentionally or unintentionally sell or account for them twice (double accounting). Also, both supplier and buyer have an interest in exaggerating the number of carbon offsets that a project has

produced (Kollmuss *et al.*, 2008). For SSOs to be perceived as credible, they impose complex (and costly) methods for accounting both carbon and environmental and social benefits and granting certification. While some SSOs (e.g., Plan Vivo) reduce costs to the project by using their own staff to conduct desk audits of projects, SSOs that draw on CDM infrastructure (e.g., GS) use CDM-accredited auditors or Designated Operating Entities. These auditors generally command much higher fees than the auditors from FLOCERT (the designated Certification Body for Fairtrade International) or other sustainability certification schemes.

Sales of offsets are usually mediated electronically, via trading platforms and databases (Corbera & Brown, 2010) and often involve predominantly Northern brokers, retailers, and industrial networks. Although some buyers have shown willingness to pay more for premium offsets which involve strong storylines and/or rigorous accounting and verification procedures, many buyers are interested in paying as little as possible (Merger & Pistorius, 2011) or combining a small volume of premium offsets with a larger volume of cheap offsets without co-benefits. Overall, carbon offset prices are extremely volatile and average prices may be insufficient to cover costs of production for smallholder- and community-focused bio-carbon offsets, which are comparatively more costly to generate than credits from cook stove projects, and less popular on the market (Swallow & Goddard, 2013). Their sales are mainly limited to voluntary markets because of restrictions or non-eligibility on compliance markets (Swallow & Goddard, 2013). Several bio-carbon projects in SSA have experienced difficulties or delays in making sales (Reynolds, 2012). In the Sofala Community Carbon project in Mozambique, it has been suggested that this was partly to do with the perception of the quality of the Plan Vivo certification (Grace *et al.*, 2010).

Investment costs. It may take several years from the conception of a project up to the generation and sale of its first offsets. The finance required during this period is likely to be a significant barrier for community or smallholder-led projects, necessitating a role for investors and donors to put forward large sums of money with little guarantee of receiving returns at least in the initial years (Corbera & Brown, 2010). It is particularly difficult to design financially viable projects or source money to finance them in a context of price volatility. Many project ideas are abandoned during the initial feasibility assessment stage, because of both lack of profitability and the complexity of developing them (Leach & Scoones, 2013). Pioneering bio-carbon projects in SSA such as the Sofala Community Carbon project in Mozambique and the Kenyan Agricultural Carbon project have been extremely costly to set up and heavily reliant on donor funding (Swallow & Goddard, 2013). Costs would have to be reduced if these projects were extended or implemented elsewhere (Grace *et al.*, 2010; Jindal *et al.*, 2012).

Proposed interventions and lessons. GS and FI proposed four interventions (see Section 3(b)) which could potentially alleviate some of the limitations related to access to markets. Firstly, streamlined and simplified processes would make it easier to tackle project development, carbon accounting, and other certification requirements, potentially opening up these tasks to a broader range of actors. Secondly, tools and training to build capacity for smallholders and communities could facilitate them to take on particular roles within a carbon project. However, GS has thus far chosen to go down the route of rigor, using existing CDM rules and adding further requirements. FI standards are already considered difficult for small producer organizations to apply. Simplicity and streamlining are greater challenges now that GS and FI are in partnership, as the combination of approaches could potentially make their certification system more complicated. If quality continues to be a key consideration, there will continue to be inherent trade-offs between rigor and simplification.

Thirdly, GS and FI's commitment to reduce transaction costs could partially resolve the issue of high costs in project development and generation of offsets. SSOs are responsible for setting the fees for project registration and certification and defining which actors audit projects against their standards and these fees absorb significant proportions of project budgets. In general, SSOs have been criticized for the high costs of certification that serve to exclude small producer organizations (Mutersbaugh, 2005). Nevertheless, projects involving smallholders and communities scattered over large areas may have structurally higher operational costs which make them less able to compete with more centralized types of project design and these are beyond the influence of SSOs. Fourthly, upfront financing mechanisms could alleviate another portion of the burden of investment costs, but outcomes depend on how these are devised and which conditions are placed on the finance. For example, if the upfront finance is provided by the buyer of the offsets, they will incur greater risks, and this could fall back on those producing the offsets in terms of lower prices. This has often happened when offsets are sold *Ex-Ante* (purchased before they have been delivered), but at lower prices. Also, imposing additional financing requirements on the buyer may discourage some potential buyers.

Notably, GS and FI did not include any interventions in their initial set of propositions which could facilitate sales of carbon offsets. In the context of a weak carbon market, a shortage of demand for GS–FI certified offsets is probable. However, there is some confidence that FI could play a role in transforming the market (e.g., Ciscell, 2010). In the case of coffee, FI has succeeded in increasing profits and commanding a price premium (Nelson & Martin, 2014) although most discussions on the impact of Fairtrade certification ignore the fact that most coffee producers fail to sell all their certified coffee under Fairtrade conditions because of low demand (Bacon, Méndez, & Fox, 2008). Fairtrade certified products have traditionally been bought by individual consumers, but are increasingly incorporated into public and corporate procurement strategies (Fisher & Corbalán, 2013). Similarly, the voluntary carbon market has a predominantly corporate consumer base (Lovell, Bulkeley, & Liverman, 2009) but public authorities are increasingly becoming customers (Peters-Stanley & Gonzalez, 2014). It is difficult to predict how the market will evolve in the coming years.

(b) *Fair benefit-sharing*

Bio-carbon projects involving smallholders and communities have been shown to be subject to transaction costs which render them costly to implement. Nevertheless, carbon projects are commonly considered an opportunity for channeling carbon finance to those least responsible for climate change. Several authors have questioned the legitimacy and efficacy of project budgets managed by donors and investors, underlining the need to decipher how costs and revenue are split between the stakeholders involved, what proportion of the budget is absorbed by transaction costs, as well as how much goes to the communities responsible for carbon sequestration (Fairhead *et al.*, 2012; Sharma & Suppan, 2011). In this section we explore both financial and non-financial benefits in terms of how they are discussed and

decided on, their relative importance, and the limitations to determining a "fair share".

Who defines co-benefits? Carbon projects carried out under certification frameworks which explicitly take account of sustainable development are supposed to deliver environmental and social co-benefits to the communities involved or affected by them, as well as emissions reductions that benefit the world at large and the off-setter. Co-benefits must be defined at the project outset and detailed in initial project documents (usually by the project developer), and may be optimistically stated (Lohmann, 2006). For example, a project involving Shea tree reforestation in Northern Mali promises increased Shea butter production as a benefit to farmers (Shames, Bignoni, Fay, Ruhweza, & Wallace, 2010) but as Shea trees take 20–30 years before they fruit, only future generations can hope to benefit in this way. Local stakeholder consultations mandated by some standards (e.g., GS and the CCB Standard) are supposed to enable participants to contribute to defining sustainable development benefits and identifying any potential harm. Although such tools incentivize a more structured inclusion of social dimensions in a project (Bumpus, 2011), the actual outcomes are contingent on the enactment of these tools by different actors and the rigor with which the SSO checks for non-compliance and encourages corrective measures. Evidence from a desk-review of design documents of 56 forest carbon projects certified under the CCB Standard (Suiseeya & Caplow, 2013) suggests that in many cases, mechanisms "were notably devoid of diverse measures of engagement that could potentially engage a more comprehensive- and possibly more representative-group of stakeholders" taking part in the consultation process (Suiseeya & Caplow, 2013, p. 973). Where methods for inclusion were deployed, the choice of methods and the information provided about them suggested a more passive role for the community. In large meetings, people may be hesitant to express themselves (Suiseeya & Caplow, 2013) and simply presenting technical information might be insufficient for communicating complex concepts related to forest carbon projects, and ensuring comprehension (Lewis & Sheppard, 2006). When it came to providing input, only 57% of projects reported any of the responses received from community members, and 16 projects did not gather any input from community-based stakeholders (Suiseeya & Caplow, 2013). There were multiple examples of design documents which were not compliant with aspects of the Standard but had nevertheless been validated, suggesting that the criteria were not being rigorously applied or audited (Suiseeya & Caplow, 2013).

Financial and non-financial benefits. In bio-carbon projects, the people carrying out practices enabling carbon sequestration or reduced emissions will need to receive direct and/or indirect financial and non-financial benefits (Stringer *et al.*, 2012) such as incentive payments, improvements to soil fertility, increased agricultural yields, employment, additional income from timber or non-timber products harvested from the trees products, access to cheaper fuel, training, and secured land tenure. However, evidence suggests that financial benefits have often been insufficiently attractive, regular or disseminated enough to motivate or compensate participants, especially when they incur significant investment, risks, and labor costs (Dougill *et al.*, 2012; Swallow & Goddard, 2013). Particularly with carbon projects in SSA involving croplands and pasture, there is very little evidence to determine whether revenues from carbon sequestration can actually improve rural producers' incomes (Perez *et al.*, 2007). The issue of direct payments, and whether or not they are a key motivation for adoption and sustained implementation of new land use practices associated with carbon projects, is much debated (Fisher, 2012). Evidence from Trees for Global Benefits in Uganda showed that payments were the main motivation for involvement, particularly at the household level, although in one area, and the existence value of trees was a bigger motivation (Fisher, 2012). Similarly, in the Sofala Community Carbon project in Mozambique, participants relied on payments which served as a safety net because planting of trees involved high transaction and opportunity costs and losses when they did not survive (Dougill *et al.*, 2012). In both projects, payments are front-loaded: for the former, carbon sequestration activities laid down in a 25-year contract are paid over the first 10 years (Fisher, 2012), and in the latter, payments for 100 years of carbon sequestration are concentrated into the first 7 years, meaning that farmers who provide carbon services get the "best possible terms" (Jindal *et al.*, 2012, p. 2133). However, front-loading has implications for temporal sustainability of carbon sequestration activities, particularly after the end of the front-loaded payment period (Fisher, 2012). In the Mozambican project, payments temporarily ceased because of a rupture in the sale of offsets, and participants were unwilling to act without them and faced disappointment as well as an income gap (Dougill *et al.*, 2012). This also illustrates that participants' perceptions of a project and its associated risks and benefits can condition behavioral change or adoption and the sustained implementation of new land use practices (Dougill *et al.*, 2012; Tschakert, 2007). It may be acknowledged that carbon payments alone cannot emancipate people from poverty, and are only intended as a way to smooth the transition to a more sustainable and productive set of land uses which eventually generate value independent of carbon payments (Jindal *et al.*, 2012). Nevertheless, implementers may be wrongly assuming that money is not a significant motivation (Fisher, 2012).

Benefit-sharing within the community. Where benefits do reach local communities, there is evidence of unjust distributions, as carbon projects are unlikely to address pre-existing marginalization (Mathur *et al.*, 2014). In the Sofala Community Carbon project in Mozambique, employment was deemed one of the major economic benefits by those who had been hired by the project (Jindal *et al.*, 2012), but employment is usually limited to a few people and may only be temporary. Actors involved in projects aiming to benefit smallholders and communities face a challenge in designing them in ways that maximize investment returns for a range of farmers without marginalizing others (Perez *et al.*, 2007). The role of local organizations and leaders in brokering deals or facilitating the distribution of benefits shapes project participants' abilities to draw an equitable share of the benefits (Dougill *et al.*, 2012; Lipper, Pingali, & Zurek, 2006; Perez *et al.*, 2007). If community-based carbon projects are to achieve their multiple environmental, economic, and social goals, the activities they incorporate must be backed by "strong rural organizations, legitimate and representative leadership, client-driven extension, local capacity building, and informed and enabling policies" (Perez *et al.*, 2007, p. 8). However, it is difficult to take into account the diversity of forms of social organization, institutions, and practices when designing projects, or standards (Leach & Scoones, 2013; Perez *et al.*, 2007).

Harmful effects and project reputation. Some projects entail negative impacts on local communities but very few tangible benefits. Large-scale forestry, biodiversity corridor, and biochar projects have been criticized as routes for foreign direct investors to buy tracts of land cheaply from national govern-

ments for extended periods, and to benefit disproportionately, while dispossessing local communities and excluding them from the resources from which they earn their living (Leach *et al.*, 2012; Tienhaara, 2012). In some instances, these projects have incited strong critique from affected communities, and from journalists and NGOs, jeopardizing the project's legitimacy and causing it to crumble (Reynolds, 2012). This suggests that focusing on local goals may not merely be a strategy for enhancing social benefits. There are also pragmatic reasons for doing so since a project's sustainability depends on its meeting of local and global expectations (Reynolds, 2012).

Proposed interventions and lessons. In the initial GS–FI communication, the only possible intervention relating to benefits was the suggestion of defined and direct financial benefits to communities (see Section 3(b)). From a standards perspective, financial benefits may be easier to measure and track at least in the short term, compared to less tangible benefits, or benefits that take longer to materialize. Choosing to focus on community rather than individual payments has its own set of implications for fairness, and depends on the presence of strong local institutions which serve the interests of the smallholders and community members involved in projects. Evidence from the literature suggests that financial payments at the household level may be important motivations for participants in bio-carbon projects but in themselves are not enough to pull people out of poverty, especially in the context of weak market prices. This suggests payments need to be combined with other types of benefit. Therefore, GS and FI were potentially raising expectations by suggesting the outcome of defined and direct financial benefits, the delivery of which is beyond their control.

Meanwhile, GS and FI can potentially shape benefits accrued from using their label(s), in the form of reputation. Carbon certification has not always been successful in enhancing reputational benefits, especially in the face of critics' reports of negative social and environmental outcomes (e.g., Kill, 2013; Lohmann, 2006). This critique includes a project certified by Plan Vivo, an SSO which emphasizes improvement of livelihoods and restoration of ecosystems. Evidence of lack of rigor in the enforcement of carbon standards (Suiseeya & Caplow, 2013) also threatens the credibility of third party certified carbon offsets. The GS–FI partnership is potentially an opportunity for enhancing reputational benefits since both SSOs take pride in emphasizing the quality and attributes of their standards. FI has succeeded in unveiling the social aspects of production (Nelson & Martin, 2014), although certification schemes have been blamed for sometimes capitalizing on and claiming credit for practices that coffee farmers have adopted for generations (Bacon *et al.*, 2008). This critique could potentially become applicable to GS–FI certified carbon offsets. Carbon projects must involve activities which are different from "business as usual". If they fail to prove additionality of emissions reductions, they will lose their credibility.

6. DEVELOPING A RESEARCH AGENDA FOR FAIR CARBON

The section above has critically reviewed the ongoing issues and challenges that GS, FI, and other SSOs will the need to grapple with as they advance along pathways toward fairness. Some of the interventions and gaps mentioned above may only be possible to evaluate several years into the future, but they can be incorporated into a guiding framework for reflecting upon the standard setting process as it unfolds. Below we outline three overlapping research areas which have emerged from our initial analysis and warrant further attention.

(a) *Pinpointing multiple definitions and mechanisms for achieving "fair carbon"*

This paper has used the broad framings of fairness in terms of access and benefits. However, the term "fair carbon" is still a new and fuzzy notion and attempts to define and operationalize it through the FI–GS partnership are ongoing. McDermott *et al.* note with respect to equity, that "without a clear definition of which aspects... are being pursued and how, it is difficult to evaluate the impact of policies and programs..., and impossible to plan for it effectively" (2013, p. 2). Various theoretical frameworks and conceptual lenses for exploring fairness have been applied to carbon projects and certification in Asia, Africa, and Latin America (Brown & Corbera, 2003; Mathur *et al.*, 2014; McDermott *et al.*, 2013; Pinto & McDermott, 2013). Others have begun by exploring definitions of fairness in practice, and used these to build on environmental fairness theories (Luttrell *et al.*, 2013; Schlosberg, 2004). Our goal is not to seek a universal or theory-driven definition of fairness, but it will be useful to draw on equity frameworks as reference points for identifying what does or does not form part of different stakeholders' perceptions of fairness. McDermott *et al.*'s (2013) framework in particular is useful for exploring not only the *content* of fairness (for example in terms of access, procedures, and benefits) but also the outer layers of fairness in terms of the *goal* (which fairness outcomes are being aimed for), the *target* (who should fairness be for) and how the *parameters* are set by GS, FI, and associated partners. This latter dimension includes exploring who does and who does not participate in the process of defining what "fair carbon" should mean, and whose understandings of "fair carbon" are taken into account in the standard. As well as clarifying plural definitions it is also important to identify the specific standards mechanisms considered as quintessential for achieving fairness outcomes by actors taking part in the standards making process. These mechanisms may each be surrounded by implicit or explicit theories of change, and their arrival into a final standard will be a result of dynamic governance processes involving negotiation of interests, power dynamics, and compromise.

(b) *The GS–FI partnership and sustainability governance*

The GS–FI partnership can be viewed within a broader context of sustainability governance, which is characterized by the emergence of market driven, voluntary standards which have expanded into ever new sectors (Cashore, Auld, & Newsom, 2004; Loconto & Fouilleux, 2014). Non-state governance through voluntary standards and partnerships and multi-stakeholder initiatives involving SSOs and other private actors (Bitzer, Glasbergen, & Leroy, 2012; Cheyns, 2011) are characterized by varied dynamics, including convergence between the policies put forward by different private regulators (Green, 2013) as well as rival governance and competition between standards (Ponte & Riisgaard, 2011; Smith & Fischlein, 2010). Several analytical focal points have been underlined with respect to such initiatives, such as how and why they emerge (Green, 2013; Loconto & Fouilleux, 2014), the issues they focus on and the way that they define the boundaries of these issues (Bulkeley *et al.*, 2012; Loconto & Fouilleux, 2014). The GS–FI partnership can also be explored in terms

of the roles of the different actors involved, the functions they perform, and the way that accountability is sought, adding to Bulkeley *et al.*'s analysis of parallel climate change governance initiatives. A number of authors have underlined the need to critically assess the legitimacy of governance initiatives and the mechanisms they deploy to garner legitimacy (Fuchs, Kalfagianni, & Havinga, 2011; Loconto & Fouilleux, 2014; Smith & Fischlein, 2010; Suiseeya & Caplow, 2013). This is particularly relevant to the GS–FI partnership because of the controversy surrounding carbon trading and the sensitivity of combining fairness with carbon.

(c) *Research on standards implementation and actual local level outcomes*

The extent to which standards exclude smallholders from markets or provide them with opportunities to improve welfare and competitiveness is much debated and there is evidence to support both positions (Henson & Humphrey, 2010; Jaffee, Henson, & Diaz Rios, 2011). There have been multiple attempts to facilitate smallholder compliance with sustainability and food quality standards in recent years, particularly in SSA, but insufficient research into the impacts or cost-effectiveness of such efforts (Jaffee *et al.*, 2011) and their transformative potential (Bolwig, Ponte, Du Toit, Riisgaard, & Halberg, 2010). Changes in standards provisions and development of new tools may fuel change on the ground in projects, but actual local outcomes are contingent on factors beyond standards themselves (Bumpus, 2011), and there is considerable room for interpretation and opportunism in the way these standards are implemented. Therefore, it is critical to explore not only the standards provisions or the project designs on paper, but also the implementation of standards and projects in practice. Several studies have explored the impact of FI standards (Jaffee, 2008; Nelson & Martin, 2014), as well as the impact of particular carbon projects on poverty reduction (e.g., Jindal *et al.*, 2012). However, studies on the impact of particular carbon standards and their ability to produce changes within projects have been limited to desk reviews (Suiseeya & Caplow, 2013; Wood, 2011). While it will only be possible to explore the impact of the complete set of standards provisions and tools developed through FI and GS's partnership retrospectively, initial research can explore this theme on a micro-scale within the context of particular projects by examining whether any of the individual fairness mechanisms they propose are already mirrored in existing projects, if and how they are working, and by seeking the opinions of project participants or those who are involved in project implementation on the ground.

7. CONCLUSION

Heated debates surround the concept of fairness in carbon projects but the term itself is widely interpreted and lacks a clear definition. We took a pragmatic approach by starting with the pillars of access and benefits that FI and GS proposed to include in their approach to fairness, and reviewing the academic literature in order to unravel what lies behind these pillars. We assessed how they are interconnected, and which practical constraints shape fairness outcomes within carbon projects. The GS–FI partnership provides an interesting focus because it potentially opens up discursive and material spaces, whereby more vulnerable stakeholders currently excluded from, or marginal in the carbon trading system could potentially play a more active role and reap more benefits. Our analysis offers potential guidance for those involved in setting the parameters of fairness in refining their definitions, as well as informing further academic debate on "fair carbon".

While the outcomes of efforts to enhance access and benefits to smallholders and communities are highly uncertain, it is important to explore steps being taken toward these goals. With many actors involved, multiple interests at stake, and a competitive context which may push SSOs to act quickly to fill gaps in the standards market, independent research can help to enhance transparency within the process. This paper contributes to a growing body of critical research on standard-setting processes (Bacon, 2010; Cheyns, 2011; Nelson & Tallontire, 2014; Reinecke, 2010; Tallontire, Opondo, & Nelson, 2013). Specifically we contribute through providing an exploration of multiple understandings of fairness and examining which of these feature in GS and FI's operationalization of "fair carbon". We also contribute more generally by identifying which governance processes shape the content of eventual standards, rules, and procedures they develop and finally by ascertaining what the various mechanisms perceived to support greater access and benefits for smallholders and communities, may look like when implemented within particular carbon projects. Bringing these areas together will create a comprehensive research agenda for carbon projects and carbon standards aiming to deliver fairness.

NOTES

1. This is our term, and may not match with the eventual name that the Gold Standard and Fairtrade International assign to their initiative.

2. Note that these are based on an understanding of what Gold Standard and Fairtrade International were planning to work on, and some of these gaps and considerations may already have been addressed or changed during subsequent discussions and on-going work by the two organizations.

3. Nevertheless we recognize the overlaps between private governance spheres and the CDM itself.

4. This also involved entering into a partnership with the Forest Stewardship Council, also announced in 2012.

5. Other examples are the VCS–CCB partnership, work by VCS, CCB, and the Rainforest Alliance to promote access for smallholders and communities to carbon markets, the dual certification scheme developed by the Gold Standard with the Forest Stewardship Council developed for forests being managed for timber and carbon sequestration, and the add-on standard for measuring women's empowerment within carbon projects developed by WOCAN (Women Organising for Change in Agriculture and Natural resource management).

6. Examples are the Uganda Carbon Bureau who claim they operate with a fair trade ethos, and the Fair Climate Network.

7. This is based on the initial press release announcing the collaboration between Fairtrade International and Gold Standard, and material published on Gold Standard's website on the lines of partnership with Fairtrade International.

8. This was confirmed by the authors through an analysis of all the projects listed on the registries and websites up to the end of October 2013 for the following standards: Verified Carbon Standard, Gold Standard, Carbon Fix, the Climate, Community and Biodiversity Alliance Standard, and Plan Vivo. Social Carbon projects were also reviewed where they were jointly certified by VCS and Social Carbon. The analysis showed that there were significantly fewer forest and agricultural projects being implemented in comparison to renewable energy and energy efficiency projects.

9. Also evident from the authors' analysis, mentioned above.

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